

CLAIMS

What is claimed is:

- 5 1. A method for discovering a powerability condition of a computer network, the method comprising the steps of:
 providing a test signal to a connecting medium of the computer network;
 measuring a response signal from the connecting medium of the
 computer network; and
10 indicating whether a remotely powerable device connects to the connecting medium of the computer network based on the response signal.
2. The method of claim 1 wherein the computer network supports connection of a remotely powerable device that receives, during normal operation, an operating
15 voltage having a first voltage magnitude; and wherein the step of providing the test signal includes the step of:
 supplying, as the test signal, a test voltage having a second voltage magnitude that is substantially less than the first voltage magnitude.
- 20 3. The method of claim 1 wherein the step of providing the test signal includes the step of:
 supplying, to the connecting medium, a first voltage during a first time period; and
 supplying, to the connecting medium, a second voltage that is
25 substantially different than the first voltage during a second time period.

4. The method of claim 3 wherein the step of supplying the first voltage includes the step of applying one of a positive and negative test voltage to the connecting medium, and wherein the step of supplying the second voltage includes the step of applying the other of the positive and negative test voltage to the connecting medium.
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5. The method of claim 1 wherein the connecting medium includes (i) a first connecting link having a local end that terminates at a first transformer and a remote end, and (ii) a second connecting link having a local end that terminates at a second transformer and a remote end; and wherein the step of providing the test signal includes the step of:
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- applying the test signal to the connecting medium through a centertap of the first transformer and a centertap of the second transformer.
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6. The method of claim 1 wherein the connecting medium includes a local end and a remote end, and wherein the step of indicating includes the step of:
- selectively identifying, through the local end of the connecting medium, one of (i) a backwards wired device condition at the remote end, (ii) an open condition at the remote end, (iii) a remotely powerable device condition at the remote end, and (iv) a shorted/non-powerable device condition at the remote end.
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7. An apparatus for discovering a powerability condition of a computer network, comprising:
- a controller;
 - a signal generator coupled to the controller; and
 - 5 a detector coupled to the controller, the controller (i) configuring the signal generator to provide a test signal to a connecting medium of the computer network, (ii) configuring the detector to measure a response signal from the connecting medium of the computer network, and (iii) indicating whether a remotely powerable device connects to the connecting medium of the computer
 - 10 network based on the response signal.
8. The apparatus of claim 7 wherein the computer network supports connection of a remotely powerable device that receives, during normal operation, an operating voltage having a first voltage magnitude; and wherein the controller configures
- 15 the signal generator to supply, as the test signal, a test voltage having a second voltage magnitude that is substantially less than the first voltage magnitude.
9. The apparatus of claim 7 wherein the controller configures the signal generator to supply, to the connecting medium, (i) a first voltage during a first time period,
- 20 and (ii) a second voltage that is substantially different than the first voltage during a second time period.
10. The apparatus of claim 9 wherein the controller configures the signal generator to apply one of a positive and negative test voltage to the connecting medium as
- 25 the first voltage, and the other of the positive and negative test voltage to the connecting medium as the second voltage.

11. The apparatus of claim 7 wherein the connecting medium includes (i) a first connecting link having a local end that terminates at a first transformer and a remote end, and (ii) a second connecting link having a local end that terminates at a second transformer and a remote end; and wherein the controller configures the signal generator to apply the test signal to the connecting medium through a centertap of the first transformer and a centertap of the second transformer.
12. The apparatus of claim 7 wherein the connecting medium includes a local end and a remote end, and wherein the controller selectively identifies, through the local end of the connecting medium, one of (i) a backwards wired device condition at the remote end, (ii) an open condition at the remote end, (iii) a remotely powerable device condition at the remote end, and (iv) a shorted/non-powerable device condition at the remote end.
13. A remotely powerable device, comprising:
normal operating circuitry that couples to a connecting medium of a computer network; and
a powerability indicator, coupled to the normal operating circuitry, that (i) receives a test signal from the connecting medium of the computer network, and (ii) provides a response signal to the connecting medium of the computer network to enable discovery of the remotely powerable device based on the response signal.
14. The remotely powerable device of claim 13 wherein the normal operating circuitry is configured to receive, during normal operation, an operating voltage having a first voltage magnitude; and wherein the powerability indicator is configured to provide the response signal in response to receipt of a test voltage, as the test signal, the test voltage having a second voltage magnitude that is substantially less than the first voltage magnitude.

15. The remotely powerable device of claim 13 wherein the powerability indicator is configured to provide the response signal in response to (i) a first voltage during a first time period, and (ii) a second voltage that is substantially different than the first voltage during a second time period.
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16. The remotely powerable device of claim 15 wherein the powerability indicator is configured to provide the response signal in response to (i) one of a positive and negative test voltage from the connecting medium as the first voltage, and (ii) the other of the positive and negative test voltage from the connecting medium as the second voltage.
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17. The remotely powerable device of claim 13 wherein the normal operating circuitry includes a first transformer and a second transformer; wherein the connecting medium includes (i) a first connecting link having a local end that terminates at the first transformer and a remote end, and (ii) a second connecting link having a local end that terminates at the second transformer and a remote end; wherein each transformer includes a centertap; and wherein the powerability indicator receives the test signal through the centertap of the first transformer and the centertap of the second transformer.
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18. The remotely powerable device of claim 13 wherein the connecting medium includes a local end and a remote end, and wherein the powerability indicator selectively indicates, through the local end of the connecting medium, one of (i) a backwards wired device condition at the local end and (ii) a remotely powerable device condition at the local end.
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19. An apparatus, comprising:
normal operating circuitry that communicates with a remote device over
a computer network during normal operation; and
power circuitry, coupled to the normal operating circuitry, that discovers
whether the remote device is remotely powerable over the computer network, the
power circuitry including:
a controller;
a signal generator coupled to the controller; and
a detector coupled to the controller, the controller (i) configuring the
signal generator to provide a test signal to a connecting medium
of the computer network, (ii) configuring the detector to measure
a response signal from the connecting medium of the computer
network, and (iii) indicating whether the remote device is
remotely powerable based on the response signal.
20. The apparatus of claim 19 wherein the controller of the power circuitry
configures the signal generator to provide power to the remote device through
the computer network when the controller indicates that the remote device is
remotely powerable based on the response signal.
21. A computer program product that includes a computer readable medium having
instructions stored thereon for discovering a powerability condition of a
computer network, such that the instructions, when carried out by a processor,
cause the processor to perform the steps of:
providing a test signal to a connecting medium of the computer network;
measuring a response signal from the connecting medium of the
computer network; and
identifying whether a remotely powerable device connects to the
connecting medium of the computer network based on the response signal.

22. An apparatus for discovering a powerability condition of a computer network, comprising:
- a signal generator;
 - a detector; and
 - 5 control means for (i) configuring the signal generator to provide a test signal to a connecting medium of the computer network, (ii) configuring the detector to measure a response signal from the connecting medium of the computer network, and (iii) indicating whether a remotely powerable device connects to the connecting medium of the computer network based on the
 - 10 response signal.
23. A method for discovering a powerability condition of a computer network, the method comprising the steps of:
- providing a test signal to a connecting medium of the computer network;
 - 15 measuring a response signal from the connecting medium of the computer network; and
 - determining whether a backwards-wired remotely powerable device connects to the connecting medium of the computer network based on the response signal, and when it is determined that a backwards-wired remotely
 - 20 powerable device connects to the connecting medium, applying power to the backwards-wired remotely powerable device.